CARRIER BAG FOR FOOD PRODUCTS, IN PARTICULAR FOR FROZEN FOOD.

BACKGROUND OF THE INVENTION

[0001] The invention relates to a carrying bag, in particular for frozen food items, with handles and a fold-over flap with a slit configured to accept the handles and to maintain parallel alignment between the handles while preventing the slit from tearing even when the carrying bag is fully loaded.

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[0003] Carrying bags of this type are used in the retail trade and are intended for transporting purchase goods from the point-of-sale to the home. The outside surfaces are also used extensively for advertisements for the purchased goods or for the merchant.

[0004] Such a carrying bag is typically constructed from a rectangular, elongated strip of material which is folded approximately midway and thereby forms in the folded section a bottom surface and two side sections extending from both sides of the bottom surface. Both side sections are welded at their lateral edges, thereby forming a closed bag volume with an upper bag opening. Generally, each side section has a handle permanently attached to the respective side section and elements for closing the upper bag opening.

[0005] The carrying bag is made of a particular material adapted to insulate the temperature of the purchased food as long as possible from the ambient temperature. It is known to employ a foam layer having a plurality of air inclusions. However, this type of carrying bag has only a limited insulating ability due to the small thickness of the material. It is generally known to improve the insulation by applying a transparent plastic layer to the outside of the foam layer, thereby forming dual-layer side sections. The additional air space gained in this way between the foam layer and the transparent outer layer significantly enhances the insulating ability of the bag. However, the improved insulating efficiency is no longer effective when the food items, which typically have a rigid and mostly prismatic shape, press from the inside against the side sections of the carrying bag, thereby displacing the air layer enclosed between the foam layer and the outer layer. The insulating efficiency of the additional air layer is therefore eliminated in the compressed regions which is actually precisely the region immediately adjacent to the food items.

[0006] The carrying bag has specially shaped handles adapted to receive the relatively large weight of the purchased food items. It is generally known to fabricate both handles from a rigid plastic material and to improve the load distribution by incorporating extensions made of the same plastic material as the handles, with the extensions extending across the entire width of the side sections. However, such handle designs are quite expensive to manufacture, thus making it impractical to use them in many applications.

[0007] For closing to the upper bag opening and for avoiding air and temperature exchange between the content of the bag and the atmosphere, it is known to provide clips on the interior

surfaces of the rigid handles and their extensions which can be used to interlock both handles. Alternatively, the interior surfaces of the side sections of the carrying bag can be provided with adhesive strips or hook-and-loop fastening strips. Such closure elements are also quite expensive. In addition, they have only limited load carrying capability. For example, due to their prismatic configuration and due to their large weight, bulky food items exert a large pressure from the inside onto the side sections of the carrying bag, which the closure elements can only counteract with their adhesive force. The carrying bags therefore open easily due to the load, exposing the food items to the atmosphere. These closure elements also have only a limited lifetime.

[0008] EP 0 755 869 A1 discloses a carrying bag with a first handle disposed on the inside of one of the side sections and a second handle disposed on the inside of the other side section. A slit oriented transversely to the fill direction of the goods is disposed of the side section having the first handle above the attachment plane of the two handles. The length of the slit corresponds approximately to the inside spacing between the side portions of the handle which are attached to this side section of the carrying bag. The carrying bag is closed by pulling the second handle through the first handle and simultaneously through the slit, and by then bringing the second handle together with the first handle, which is attached to the inside, on the outside of the carrying bag.

[0009] This type of carrying bag has substantial disadvantages. The side sections of the carrying bag are only brought together in the region of the handles, whereas the side sections in the other regions are not brought together and are instead pushed apart a considerable distance by the

bulky food items. In the open state, the insulation efficiency of the carrying bag is practically nonexistent. As another disadvantage, the first handle must be pulled through a slit located in the opposing side section of the carrying bag. Because both handles are located in the same attachment plane, the handles have a different height in the region of the handles. As a result, the load is no longer evenly distributed over both handles, with the load being distributed instead over the pulled-through handle and the slit supported by the pulled-through handle. However, because the slit cannot support such loads, the side section with the slit tends to easily tear.

[0010] An uneven load distribution also occurs because one handle moves out of vertical alignment when inserted sideways in the slit. Inserting one handle sideways through the other handle is also disadvantageous. Both handles can warp as their respective side portions have the same spacing therebetween. This contributes to poor handling and again to an uneven load distribution.

[0011] As another disadvantage, the slit is located in a side section and the attachment plane is located below the slit. As a result, the entire volume of the bag above the handle attachments is not available for the intended transport of the goods.

[0012] It is a therefore an object of the invention to improve the load distribution and the insulation efficiency of a carrying bag of this type.

SUMMARY OF THE INVENTION

[0013] According to one aspect of the invention, a carrying bag for food products has two side sections each having edge portions which are connected with each other to form a common bottom section and an upper bag opening. Each of the side portions has an interior side including a handle located in a common attachment plane, wherein one of the two side sections has a greater height than the other side section and defines an overlap formed as a fold-over flap which includes a slit located above the attachment plane. The slit is configured to receive both handles. The fold-over flap is configured for cennection with an outer surface of the other side section by a closure element which extends across the entire width of the carrying bag

[0014] One particular advantage of the novel carrying bag is that the continuous and closable fold-over flap make it possible to hermetically separate the volume of the bag from the ambient. Moreover, the load is uniformly distributed over both handles, which prevents damage to the material of the carrying bag and extends the lifetime of the carrying bag. The load an be evenly distributed primarily because the slit is located in the fold-over flap and not in one of the side sections. The handles and the slit then move differently during the closure process. The handles is then no longer moved toward the stationary lateral slit, but the slit is instead moved to a location above the stationery handles. The handles thereby remain in a vertical orientation which is advantageous for uniform load distribution.

[0015] Advantageously, the side section of the carrying bag are implemented from two layers enclosing an air chamber therebetween, wherein the air chamber can be subdivided into several smaller air chambers. Advantageously, a plurality of air chambers are connected with each other

by way of damping air exchange openings. This quilt-like design stabilizes the air chambers against exterior loads.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The invention will now be described in more detail with reference to an exemplary embodiment.

[0017] It is shown in:

[0018] Fig. 1 a side view of a carrying bag in an open position and with a folded-over side section,

[0019] Fig. 2 a partial section of the carrying bag with single layer side sections,

[0020] Fig. 3 a partial section of the carrying bag with dual layer side sections, and

[0021] Fig. 4 a side view of the dual layer carrying bag.

DETAIL DESCRIPTION OF ILLUSTRATED EXEMPLARY EMBODIMENTS

[0022] As shown in Figs. 1 and 2, the carrying bag is made of an elongated rectangular film strip which is folded approximately midway, thereby forming in the folded region a bottom section, a first side section 1 and a second side section 2. Both side sections 1, 2 are welded together along all their respective lateral edges, thereby forming an enclosed fill volume with an upper bag opening. The two side sections 1, 2 are configured so that the second side section 2 has a greater height than the first side section 1. In this way, a fold-over flap 3 extending across the entire width of the carrying bag is formed. The fold-over flap 3 of the second side section 2 has a length, as shown in Fig. 2, which is dimensioned so as to extend over the bag opening and a height sufficient for attachment of the side section 1. A slit 4 is applied in the fold-over flap 3,

whereby a first handle 5 and a second handle 6 is pulled through the slit when the carrying bag is closed. The arrangement and dimensions of the slit 4 are adapted to the arrangement and the outside dimensions of the two handles. Each handle 5, 6 has a foil strip with respective ends that are welded the inside of a respective side section 1, 2. The first handle 5 is hereby connected via two welded seams 7 with the first side section 1, and the second handle 6 is connected via two welded seams 8 with the second side section 2.

[0023] The inside of the fold-over flap 3 and/or the outside of the first side section 1 include releasable closure elements 9 which can be connected to one another.

[0024] The closure elements 9 may be configured in several ways. For example, the closure elements 9 may be an adhesive which is applied in form of a strip either to the inside of the fold-over flap 3 or to the outside of the first side section 1. The closure element 9 can also be a transfer adhesive which changes its attachment location with each closure between the fold-over flap 3 and the first side section 1. The closure element 9 can also be a hook-and-loop fastener with a hook-and-loop strip on the fold-over flap 3 and another hook-and-loop strip on the first side section 1.

[0025] In a particular embodiment depicted in Figs. 3 and 4, the two side sections 1, 2 with their common bottom section are made from an expanded and metallized plastic foil which has excellent insulating characteristics due to the large number of air inclusions, with the metallic layer reflecting sun rays and light rays. An insulating foil 10 made of a colored or transparent plastic material is applied to the plastic foil, wherein the respective edges of the two foils are glued together continuously and the large side surfaces are glued together in a predetermined two-dimensional point or line pattern. Adhesive locations 11 are distributed in a two-

dimensional pattern between the outside surfaces of the two side sections 1, 2 and the interior sides of the insulating foil 10. As shown in Fig. 4, the insulating foil 10 is glued to the side sections 1, 2 in a freely selectable two-dimensional pattern so as to form cushion-like and insulating air chambers 12 between the side sections 1, 2 and the insulating foil 10. Depending on the type of the adhesive locations 11, these air chambers are either hermetically sealed from one another or connected with each other through air exchange openings 13. All air chambers 12 are connected through these air exchange openings 13 so that a quantity of air can be exchanged between all air chambers 12 in a damped and therefore time-delayed manner.

[0026] List of a reference symbols

[0027] 1 first side section

[0028] 2 second side section

[0029] 3 fold-over flap

[0030] 4 slit

[0031] 5 first handle

[0032] 6 second handle

[0033] 7 welded seam

[0034] 8 welded seam

[0035] 9 closure elements

[0036] 10 insulating foil

[0037] 11 adhesive strip

[0038] 12 air chamber

[0039] 13 air discharge openings